P1.077

Sasang types differ in thermoregulatory responses to graded exercise

DUONG DUC PHAM[1], Jong Yeol Kim[2], BonCho Ku[2], Jeong Hoon Lee[1], Eun Seok Park[1], Ji Eun Kim[1], Young Boum Lee[1], Ga Yul Kim[1], Ji Yeon Song[1], Chae Hun Leem[1]

[1] *University of Ulsan, College of Medicine, Faculty of Physiology*
[2] *Korea Institute of Oriental Medicine*

Purpose: We compared sweating response to graded exercise and its potentially related variables such as workload (We), metabolic heat production (Hprod), and temperature increment load (Tinc) according to Sasang typology.

Methods: This cross-sectional investigation included 304 apparently healthy participants at their age between 20 and 49 with their Sasang types determined. Local sweating rate measured on the chest (LSRchest) and on the back (LSRback) were measured by a perspiration meter using ventilated capsule method during a maximal treadmill exercise test. Meanwhile, oxygen uptake was measured constantly using a breath-by-breath mode indirect calorimeter. Body composition was examined by the direct segmental multi-frequency bio-impedance analysis technique.

Results: The TaeEum (TE) type was characterized by unfavorable anthropometric feature for heat loss including a larger body size, a higher fatness, and a lower body area surface area to body mass in compared with other Sasang types, particularly the SoEum type. The TE type tended to have a shorter exercise time to exhaustion and lower maximal oxygen uptake (ml.kg-1.min-1) than other types. The TE type had a stronger elevation of LSRchest in men and LSRchest in women at the middle stage of the exercise even when sweat rate was normalized for We, Hprod, Tinc, and body surface area.

Conclusion: The findings suggested that Sasang types may differ in thermoregulatory response to graded exercise in which the TE type was the most susceptible type to heat stress.(This work is supported by NRF, No. 2012-0009829).

Contact: DUONG DUC PHAM, phduongyhct@gmail.com

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P1.079

Optimization of ultrasonic-assisted extraction of glycyrrhizic acid from licorice using response surface methodology

Seol Jang, A. Yeong Lee, Ah Reum Lee, Goya Choi, Ho Kyoung Kim

Korea Institute of Oriental Medicine

Purpose: The present study optimized the ultrasonic-assisted extraction conditions to maximize the glycyrrhizic acid of extracts from licorice.

Methods: Optimal conditions with regard to extraction temperature (X1), extraction time (X2) and methanol concentration (X3) were identified using response surface methodology (RSM). A central composite design (CCD) was used for experimental design and analysis of the results to obtain the optimal processing parameters.

Results: The statistical analysis indicated that three variables and the quadratic of X1, X2 and X3 had significant effects on the yields, and followed by the significant interaction effects between the variables of X2 and X3 ($p<0.01$). The 3D response surface plot and the contour plots derived from the mathematical models were applied to determine the optimal conditions. The optimum ultrasonic-assisted extraction conditions were as follows: extraction temperature 69°C, extraction time 34 min and methanol concentration 57%. Under these conditions, the experimental yield of glycyrrhizic acid was 3.414%, which was agreed closely with the predicted value (3.406%).

Conclusion: The experimental values agreed with those predicted by RSM models, thus indicating suitability of the model employed and the success of RSM in optimizing the extraction conditions.

Contact: Seol Jang, swellseol@kiom.re.kr

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Topical Herbal Application in the Management of Atopic Dermatitis: A Review of Animal Studies

Younghee Yun[1], Inhwa Choi[2], Seong-Gyu Ko[2], Kyuseok Kim[2]

[1] *Department of Ophthalmol, Otolaryngol & Dermatol, College of Korean Medicine, Kyung Hee University*
[2] *College of Korean Medicine, Kyung Hee University*

Purpose: Herbs are widely used in the treatment of atopic dermatitis (AD) in Eastern Asian countries, and certain herbs regarded have anti-inflammatory properties that can help with AD. With the goal of developing a topical herbal agent for AD, we conducted a systematic review of in vivo studies of AD-like skin models for screening potential herbs.

Methods: Literature searches were performed using PubMed and EMBASE databases. Search terms contained three components: (A) intervention/exposure, (B) disease of interest, and (C) animal species, with adjustments made for the different databases. Two authors independently conducted the database searches. Duplicate articles were removed. Disagreements were resolved by discussions with the corresponding author.

Results: In the present study, out of 166 potential studies, we identified 22 studies that met all the selection criteria. For all studies, we judged most domains to be at unclear risk of bias. Herbs of the genus Chrysanthemum were used in two studies, and seven studies investigated herbs of the clear heat drug group. Among the AD-like animal models, NC/Nga and BALB/c mice treated with chemical haptens, DNCB, DNFB, or TNCB were used in most of the studies. Clinical symptoms, serum IgE levels, and Th1- and/or Th2-related cytokines and/or chemokines were assessed as outcome measurements.